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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,154	02/13/2004	Krishna V. Kotipalli	306213.01	5107
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MICROSOFT CORPORATION ONE MICROSOFT WAY REDMOND, WA 98052-6399			EXAMINER HE, JIALONG	
			ART UNIT 2626	PAPER NUMBER
			NOTIFICATION DATE 07/29/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/777,154	Applicant(s) KOTIPALLI, KRISHNA V.	
	Examiner JIALONG HE	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,8-10,25,28,29,32,33,35,43 and 45-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,8-10,25,28,29,32,33,35,43 and 45-53 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/14/2010 has been entered.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments

3. Applicant's arguments (Remarks, pages 9-10) regarding to rejection to claim 8 under 35 USC 112 1st paragraph have been fully considered but they are not persuasive for the following reasons.

The applicant argues that paragraphs [41] and [46] disclose the features of claim 8. The applicant further argues that paragraph [46] merely provides for converting from a first language to a second language using an intermediary language and does not specify the origin of the first, second, and/or intermediary alphabets.

In response, the Examiner notes that the majority disclosure is dealing with two languages. The only relevant section involving three languages is in paragraph [46]. Paragraph [46] discloses if there is no direct mapping between the first and second languages, using a third language as an intermediary language. Paragraph [46] gives an example of mapping Hindi text to Telugu text with English as intermediary language. There is NO disclosure mapping English to an Indic language using another Indic language as intermediary language. It appears the applicant argues the claimed feature could be induced from the disclosure of using “first language”, “second language”, and “intermediary language”. Original claims are treated as original disclosure. For amended claims, the disclosure must provide full support for the claimed subject matter. Since claimed feature in claim 8 is narrower than the original disclosure which does not have fully support for a particular embodiment (i.e., “first alphabet is Western language”). The applicant also admitted paragraph [46] **does not support** first alphabet is Western language (see above underlined text).

4. Applicant's arguments regarding claims 6 and 43 (Remarks, pages 11-13) have been considered but are moot in view of the new grounds of rejection. Bruso (US Pat. 5,649,214) is no longer used. A new reference to Virga et al. (“Transliteration of proper name in cross-language information retrieval”, ACL 2003) is cited for teaching mapping first alphabet into second alphabet through an intermediary alphabet. Virga discloses mapping a English name to a name represented as Chinese characters through Pinyin characters (Virga, fig. 1).

Examiner's Note

5. The examiner would like to summarize the disclosure and claims. In the background and summary sections, the applicant gives a brief introduction how a character is inputted into a computer under GUI based operating system (e.g., MS Windows). When a user presses a key on a keyboard, the keyboard generates a scan code. The scan code is converted to a Unicode by operating system. The Unicode character is sent to an application. Keyboards of different languages have different layout (fig. 3).

People may be familiar with one keyboard layout of a particular language (e.g., American English) but not with other layouts of different languages. To solve a problem that a person has to input text using an unfamiliar keyboard layout (e.g., using an Indic language keyboard), this person could type according to his familiar English keyboard layout. The invention discloses a method of using a software hook to intercept a key code typed based on English keyboard layout and converts it to a key code corresponding to the Indic keyboard layout (fig. 8b). The majority sections of disclosure (fig. 4-8 and associated text) are concerning mapping characters typed on Indic keyboards but the person is typing using English keyboard layout (the person is familiar with English keyboard, not with Indic keyboard, but the person knows Indic language). However, these disclosed the features are not in the claims.

The independent claims 6, 43 and 53 are directed to a method/computer readable medium of mapping a first alphabet to a second alphabet through an

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intermediary alphabet. The claimed features are only shown in fig. 10 and paragraph [46].

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 43, 51 and 52 are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention.

The instant claims are directed to computer readable storage medium. However, the specification states the computer readable storage medium includes, but not limited to, RAM, ROM etc (paragraph [30]). Given the broadest reasonable interpretation of the claim, the full scope of the claimed "computer readable storage medium" covers both transitory and non-transitory media. Transitory media includes signals which are non-statutory (In Re Nuijten, Fed. Cir. 2007), and therefore the claim as a whole is non-statutory. The examiner suggests adding the modifier "non-transitory" to the claimed medium.

Claim Rejections - 35 USC § 112

8. Claims 8, 48, 49 and 53 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject

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matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Previously amended claim 8 and new claim 49 recites “wherein the first alphabet is a western alphabet and the third alphabet is an indic alphabet”. However, based on the disclosure (specification, paragraph [46] and fig. 10), it appears the invention is mapping from one indic language (e.g. Hindi, first alphabet) to another indic language (e.g., Telugu, third alphabet) through English (second alphabet). There is no support for claims 8 and 49.

The applicant added new claims 45-53 and did not point out support in the original disclosure. MPEP (2163.06) states applicant should specifically point out the support for any amendments made to the disclosure.

New claim 48 recites “if it is determined that a directed mapping scheme exists:; and not converting the text string in the first alphabet to the phonetic string in the second alphabet”.

The Examiner could not find fully support for the claimed conditional relationship from the original disclosure. The only relevant section is in paragraph [46] which only states "where there is no direct mapping scheme available from the first language to the

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second language". The claim 48, which depends on claim 46 and 6, is dealing with the situation of using three languages (first, second, and third languages). The only relevant section related to using intermediary language is in paragraph [46] and fig. 10. These sections do not have fully support for the claimed conditional relationship.

New claim 53 recites conditional relations ("if a direct mapping scheme does not exist ..."; "if it is determined that a direct mapping scheme does exist...") similar to claim 48. For reasons similar to above, the Examiner could not find fully support for the claimed conditional relations of claim 53.

9. Claims 8 and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 and 49 recite "Western alphabet". Specification, paragraph [03], mentions Latin alphabet such as **English or other Western European languages**. The specification also mentions non-Latin alphabets such as **Chinese, Japanese, Russian, and Arabic**.

It is unclear if "Western alphabet" includes "Russian" or "Arabic" which are spoken by people located in countries west relatively to India. It appears the applicant is trying to express "Latin alphabet".

Claim Rejections - 35 USC § 103

10. Claims 6, 8-10, 25, 28-29, 32-33, 35, 43 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Janakiraman et al (US Pat. 7,369,986, previously cited, hereinafter referred to as Janakiraman) in view of Virga et al. ("Transliteration of proper names in cross-language information retrieval", ACL 2003).

Regarding claims 6 and 43, Janakiraman discloses a computer implemented method and computer readable medium (fig. 3) for transliterating languages in a computing device comprising:

receiving a text string in a first alphabet on an input of the computing device wherein the text string is inputted by a user (**col. 7, col. 7, lines 10-25, Fig. 4A-4E, receiving typed messages from a keyboard, fig. 5A, Tamil version, fig. 5C, English version**);

converting the text string in the first alphabet to a phonetic string in a third alphabet based on a first predefined phonetic mapping scheme between the first alphabet and the third alphabet, the third alphabet different than the first alphabet (**col. 6, lines 7-20, fig. 4A –fig 4E, transliteration Tamil language Governor to "aaLuunjar"**);

Janakiraman discloses using English characters to represent various indic languages used in India by transliteration (**title and Abstract**). Janakiraman does not disclose transliteration through an intermediary language.

Virga discloses transliteration English name to Chinese name represented as Chinese characters (Virga, fig. 1). Because there is no direct mapping between English name and Chinese characters, the transliteration is done through PinYin, an intermediary alphabet (Virga, fig. 1, and section 2, translation model training).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Janakiraman's teaching with Virga's teaching to transliterate English name to Chinese characters through Pinyin (intermediary alphabet). One having ordinary skill in the art would have been motivated to make such a modification so that the transliteration could be done more accurately and the result Chinese names would have similar sound as the original English names.

Regarding claim 8, the combined teaching of Janakiraman and Virga further discloses the first alphabet is a Latin language and the third alphabet is an Indic language (**Janakiraman, Fig. 4C, English, Fig. 5A, Tamil, also fig. 4A**).

Regarding claim 9, Janakiraman further discloses the first alphabet is an Indic language and the third alphabet is another Indic language (**col. 1, lines 45-55,**

transliterating a selected word to a target language, col. 1, lines 14-20, target languages could be Hindi, Sanskrit, Urdu and all 18 India official languages).

Regarding claim, Janakiraman further discloses displaying the converted text string in the third alphabet on an output device (**fig. 4A- fig. 4E**).

Regarding claim 25, Janakiraman further discloses transmitting the phonetic string in the third alphabet to a remote processing device (**fig. 1, network, fig. 2, server, fig. 4A-4B, web browser**).

Regarding claim 28, Janakiraman further discloses the phonetic string in the third alphabet contains at least one character that is not present in the text string in the first alphabet **col. 6, lines 10-20, fig. 4A, Tamil writing and English language using different characters**).

Regarding claim 29, the combined teaching of Janakiraman and Virga further discloses the phonetic string in the third alphabet contains at least one character that is not present in the phonetic string in the second alphabet (**Janakiraman, col. 1, lines 12-40, different Indian languages and English use different characters; Virga, fig. 1, Chinese Pinyin uses Umlaut**).

Regarding claim 32, Janakiraman further discloses wherein the input is a keyboard that is configured to receive the text string in the first alphabet from a user (**fig. 3, #320**).

Regarding claim 33, Janakiraman further discloses displaying the phonetic string in the third alphabet to the user on an output device (**fig. 4, 4A-4E**).

Regarding claim 35, the combined teaching of Janakiraman and Virga further discloses there is no predefined phonetic mapping scheme between the first alphabet and the third alphabet such that the text string in the first alphabet cannot be converted directly to a phonetic string in the third alphabet (**Janakiraman col. 1, lines 12-42, no mapping between many different indic languages such as between Hindi and Sanskrit; Virga, no mapping between English and Chinese characters**).

Regarding claim 45, the combined teaching of Janakiraman and Virga further discloses wherein the phonetic string in the second alphabet comprises at least one character that is not present in the text string in the first alphabet (Janakiraman, fig. 4, col. 1, lines 12-22, Hindi, Sanskrit etc have different alphabet; Virga, Pinyin has at least one character not presented in English, e.g., umlaut U).

11. Claims 46-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Janakiraman in view of Virga and further in view of Schafer et al. ("Inducing translation

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lexicons via diverse similarity measures and bridge languages"., Proceedings of 6th conference on natural language learning, 2002).

Regarding claims 46 and 51, Janakiraman discloses transliteration between English and various Indian languages. Virga discloses transliterating English name to Chinese characters through intermediary Pinyin. Janakiraman and Virga does not explicitly states determining whether a direct mapping scheme exists between the first alphabet and the third alphabet.

Schafer discloses translation lexicons among various languages. If there is no direct translation between two languages, Schafer uses a bridge language (**Schafer, fig. 1, for example, no direct translation between English and Bengali, the translation is done using Hindi as an intermediary language**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Janakiraman and Virga's teaching with Schafer's teaching to determining if there is direct mapping between English and Bengali. One having ordinary skill in the art would have been motivated to make such a modification so that people could obtain translation lexicons which does not have direct translation to English but could be indirectly translated through a bridge language (Schafer, Abstract).

Regarding claims 47 and 52, the combined teaching of Janakiraman, Virga and Schafer teaches the second alphabet is an intermediary used to convert the text string in the first alphabet to the phonetic string in the third alphabet when the text string in the first alphabet cannot be directly converted into a phonetic string in the third alphabet from the text string in the first alphabet (**Virga, fig. 1, Pinyin** (second alphabet); **Schafer, fig. 1, Hindu** (second alphabet)).

Regarding claim 48, the combined teaching of Janakiraman, Virga and Schafer teaches if it is determined that a direct mapping scheme exists: converting the text string in the first alphabet directly to the phonetic string in the third alphabet using the determined direct mapping scheme; and not converting the text string in the first alphabet to the phonetic string in the second alphabet (**Janakiraman, fig. 4, English <-> Tamil; Schafer, fig. 1, English <-> Hindi, direct mapping without using intermediary or second alphabet**).

Regarding claim 49, the combined teaching of Janakiraman, Virga and Schafer teaches wherein the first alphabet is a western alphabet and the third alphabet is an Indic alphabet (**Schafer, fig. 1**).

Regarding claim 50, the combined teaching of Janakiraman, Virga and Schafer teaches wherein the phonetic string in the second alphabet comprises at least one character that is not present in the text string in the first alphabet (**Schafer, fig. 1**).

Regarding claim 53, Janakiraman discloses a method for transliterating languages in a computing device comprising:

receiving a text string in a first alphabet on an input of the computing device

(**Janakiraman , fig. 3**);

converting the text string in the first alphabet to a phonetic string in the second alphabet based upon the direct mapping scheme (**Janakiraman, fig. 4**).

Janakiraman discloses using English characters to represent various indic languages used in India by transliteration (**title and Abstract**). Janakiraman does not disclose transliteration through an intermediary language.

Virga discloses transliteration English name to Chinese name represented as Chinese characters (Virga, fig. 1). Because there is no direct mapping between English name and Chinese characters, the transliteration is done through PinYin, an intermediary alphabet (Virga, fig. 1, and section 2, translation model training).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Janakiraman's teaching with Virga's teaching to transliterate English name to Chinese characters through Pinyin (intermediary alphabet). One having ordinary skill in the art would have been motivated to make such a modification so that the transliteration could be done more accurately and the result Chinese names would have similar sound as the original English names.

Janakiraman discloses transliteration between English and various Indian languages. Virga discloses transliterating English name to Chinese characters through intermediary Pinyin. Janakiraman and Virga does not explicitly states determining whether a direct mapping scheme exists between the first alphabet and the third alphabet.

Schafer discloses translation lexicons among various languages. If there is no direct translation between two languages, Schafer uses a bridge language (**Schafer, fig. 1, for example, no direct translation between English and Bengali, the translation is done using Hindi as an intermediary language**).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Janakiraman and Virga's teaching with Schafer's teaching to determining if there is direct mapping between English and Bengali. One having ordinary skill in the art would have been motivated to make such a modification so that people could obtain translation lexicons which does not have direct translation to English but could be indirectly translated through a bridge language (Schafer, Abstract).

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JIALONG HE whose telephone number is (571) 270-

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5359. The examiner can normally be reached on Monday-Thursday, 7:00AM-4:30PM, ALT. Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wozniak can be reached on (571)272-7632. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JH/

/James S. Wozniak/
Supervisory Patent Examiner, Art Unit 2626

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